

Title: POLYNUCLEOTIDE AND POLYPEPTIDE FAT
METABOLISM REGULATORS AND USES THEREOF

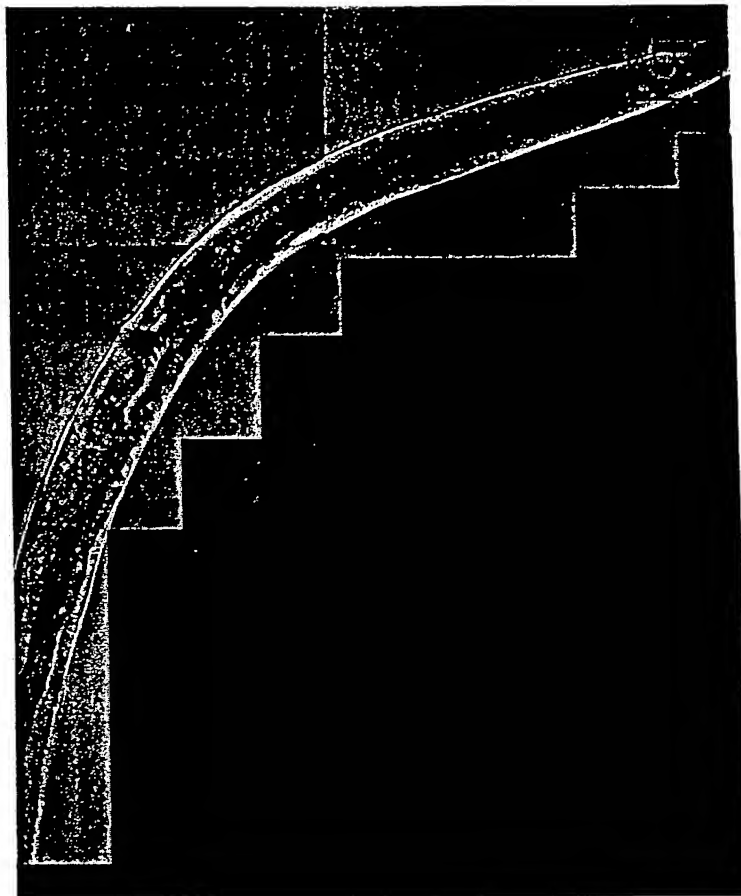
Applicant(s): Gary Ruvkun et al.

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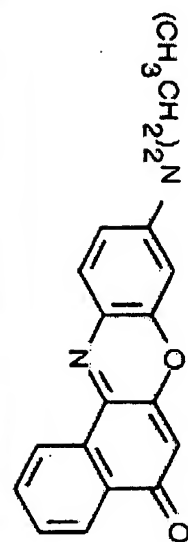
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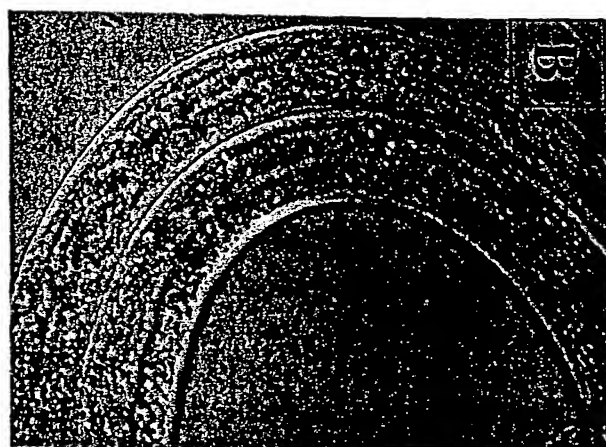
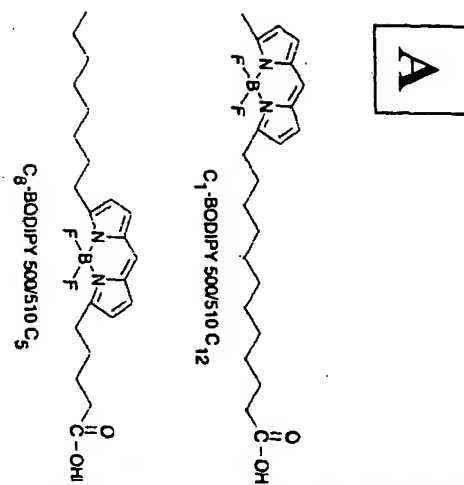
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FIGURES 1A-1B

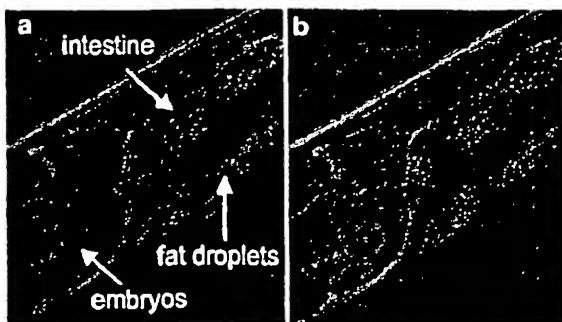


A





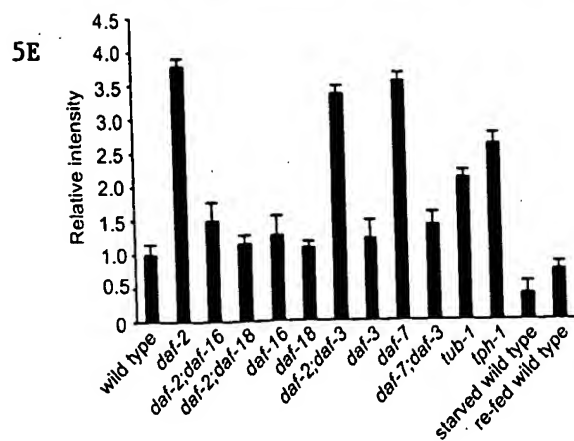
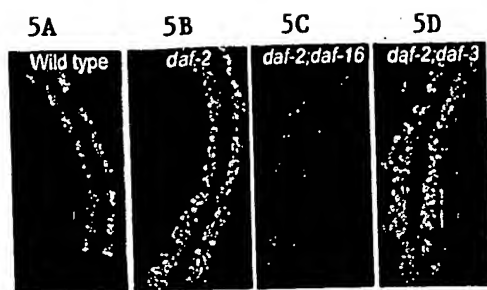
FIGURES 2A-2D



FIGURES 3A-3B



FIGURES 4A-4C



FIGURES 5A-5E

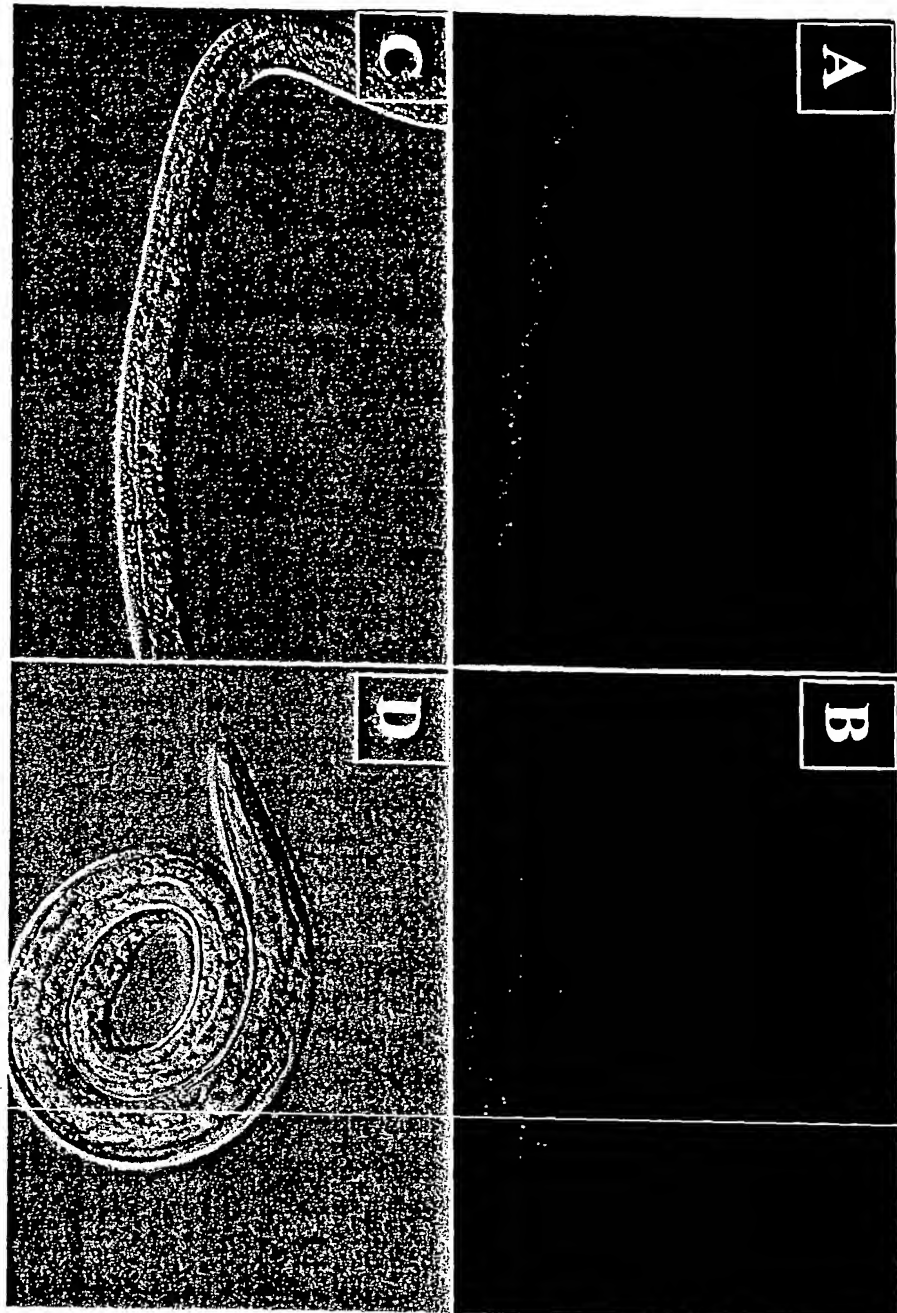
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FIGURES 6A-6D

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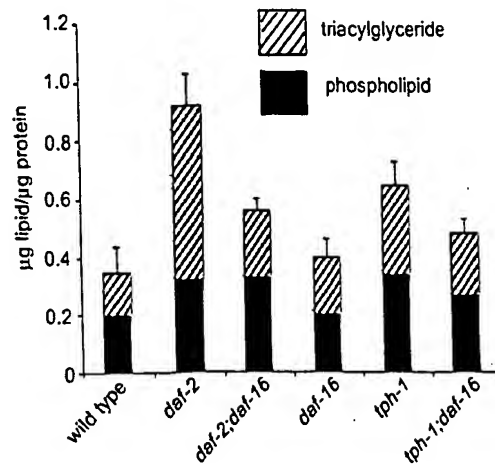
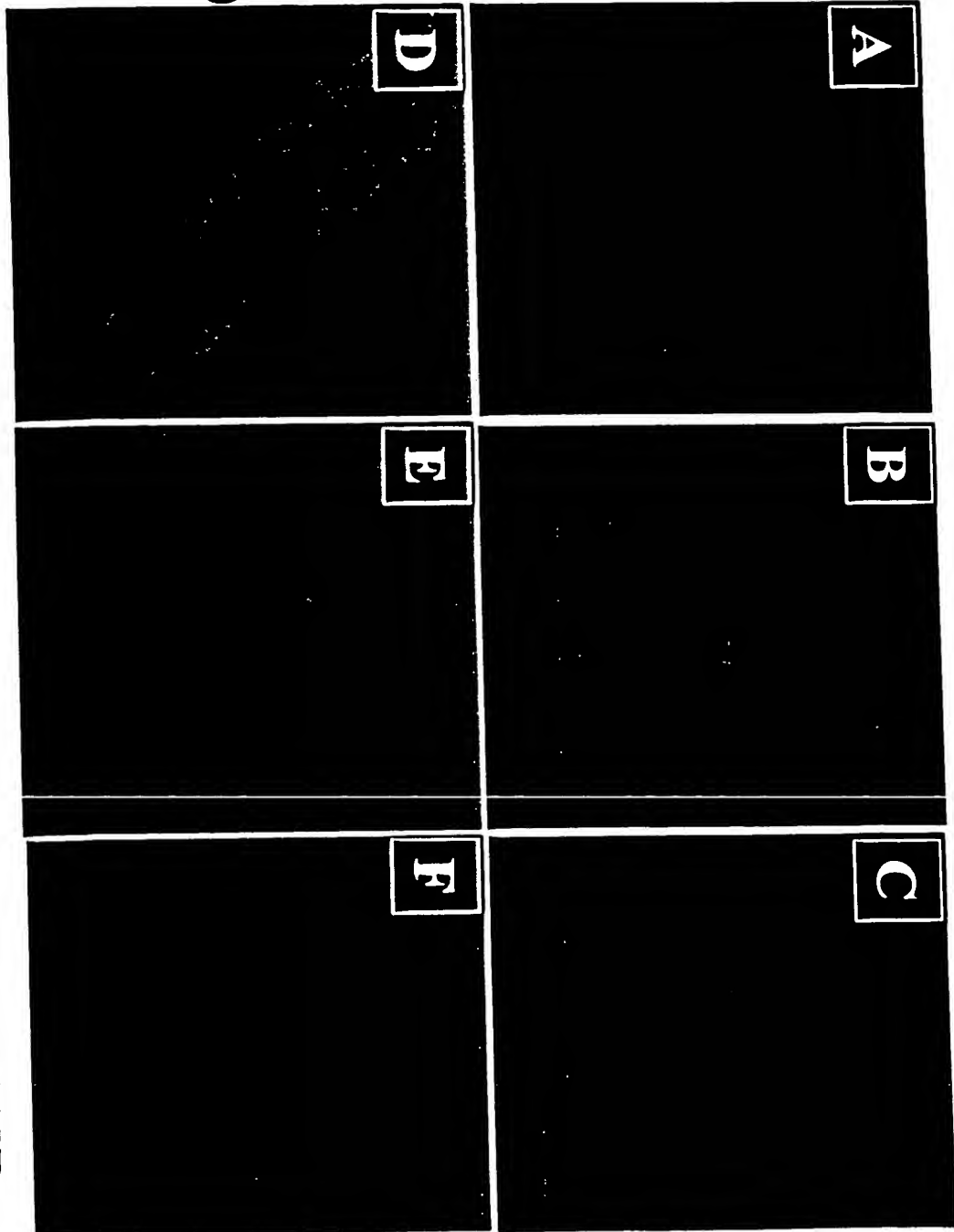


FIGURE 7

wild type

daf-2(e1370)



FIGURES 8A-8F

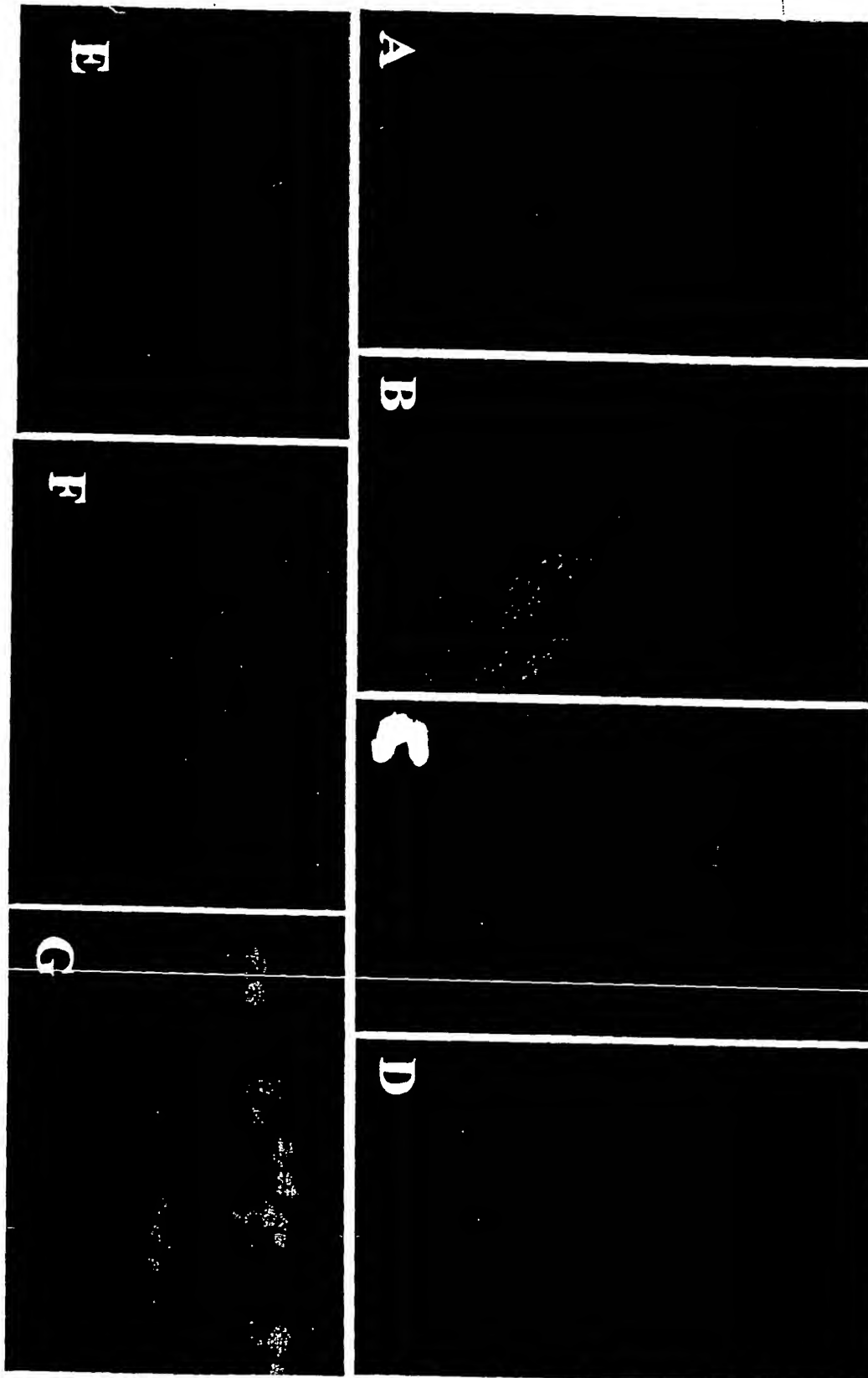
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FIGURES 9A-9G

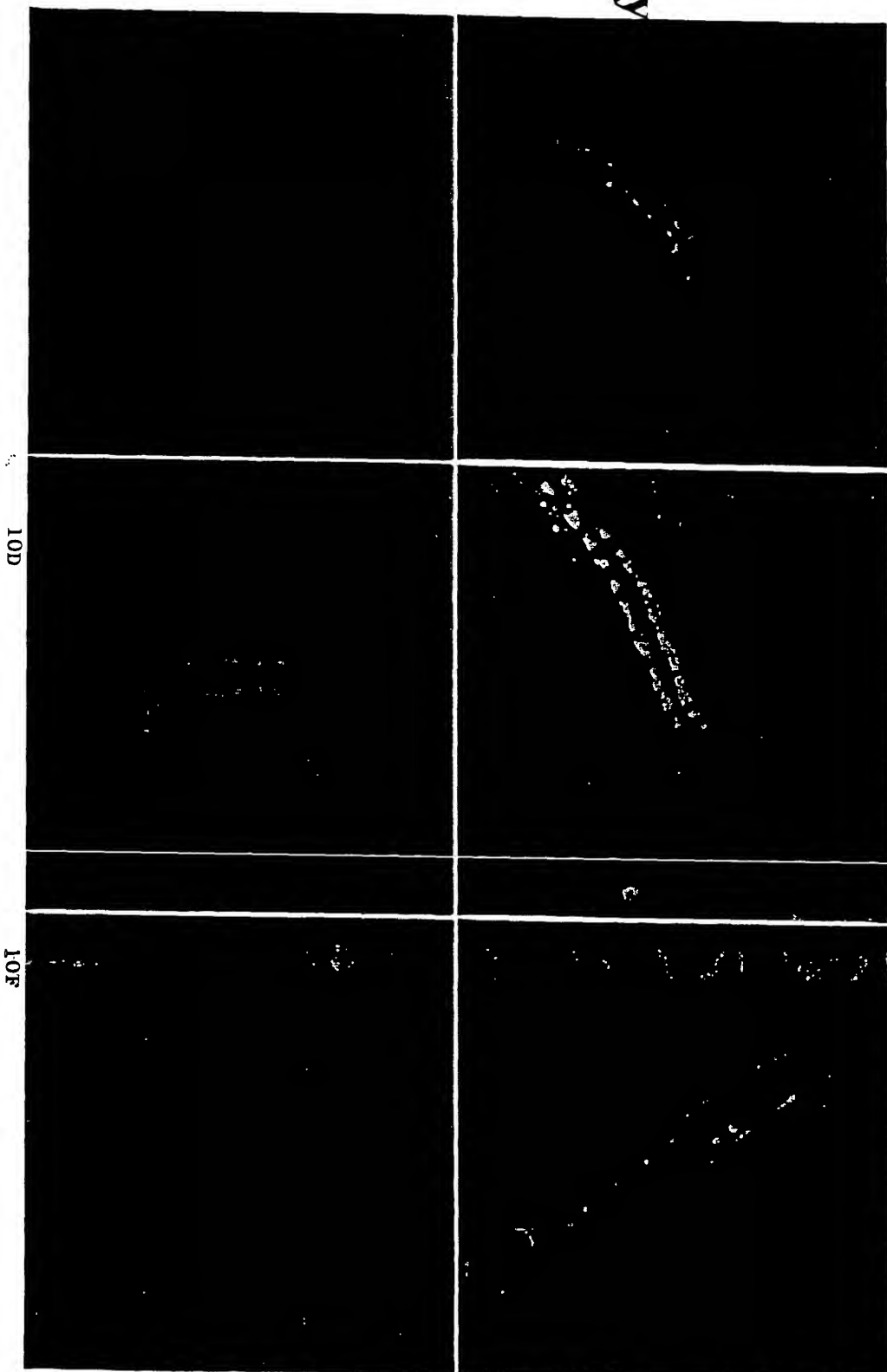
Nile red

C12-bodipy

10A

10B

wild type



10C

10E

10D

10F

FIGURES 10A-10F

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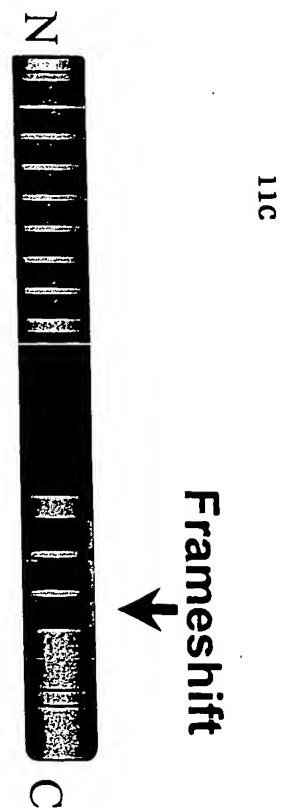
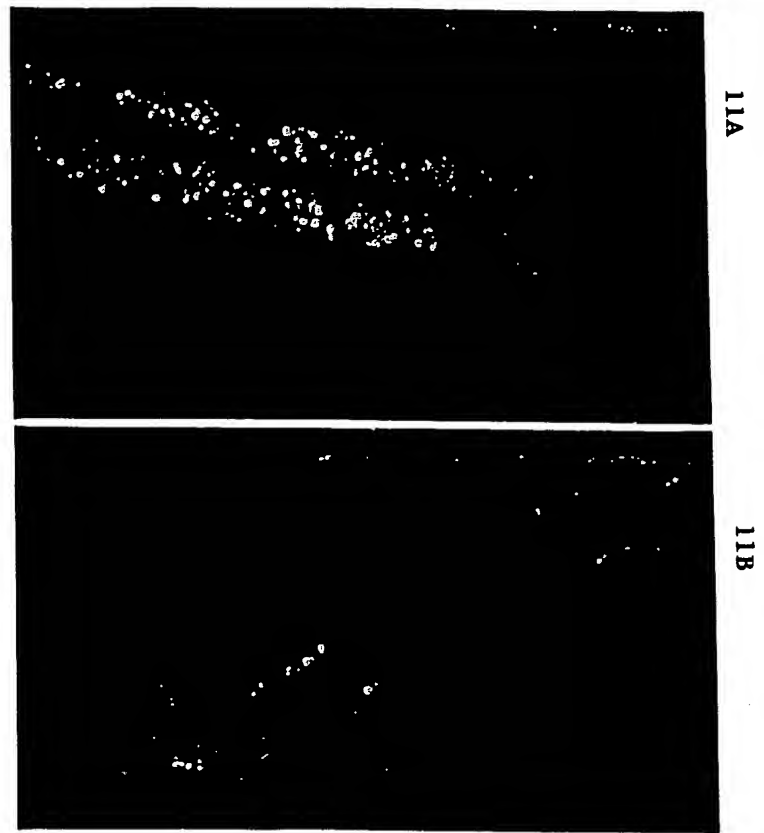
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FIGURES 11A-11C



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Figure 11 D

lpo-1 genomic

SEQ ID NO:1

```

5  agcctgttgc ctctgtcgaa gccgttttgt ctctctctcg tcgtcgtcga cccacccggc ctcccatgta
   gtgttcgttt tgcgctctat cgcacacaca cactctcggg aaacaacgac cacctcactc catctctatc
   cattctatcc tcttccatct ctacaggcca acggagacag ttcgttggac ccccgcgcac tctacctatc
   tgttcaacgc tccatattgtg caaagtctca gtcatttttc ctctgcttc ttcttctttt tattattaac
   tttttctcat cttatttctt ccactctttc gagagaccac tccgcccact ttctgttact gctttatcaa
10  acaaactgtg cgtccacacc aattctctat ttcccttcgt ctgctccggt ttcgctcact tttttgttaa
   ctatcttttc ttttttcttt taacatgttt attgatcctc accactgatc aattaatatt tattatttat
   ttctgtttcc agatcaccta cgaaaaatat taattgataa tcagaggagt aaaaATGAGG ACATGTCCTCA
   CCTCACGGG TTTCTTCTG ATTTCAATGG CCACCATTC GGTGGGCCTC CAACCGATGG GAGCACCTAC
   AAGAAgtatg ttttcttttt catttaaata tcacatagta attcaattga aaatcaatgc atttcggaat
15  ttcgcaacat tacttttgtt tggaccggtg agtcaccaat agatcaccta cgaaaaatat taattgataa
   tcagaggagt aaaaATGAGG ACATGTCCTCA CCTCACGGG TTTCTTCTG ATTTCAATGG CCACCATTC
   GGTGGGCCTC CAACCGATGG GAGCACCTAC AAGAAgtatg ttttcttttt catttaaata tcacatagta
   attcaattga aaatcaatgc atttcggaat ttcgcaacat tacttttgtt tggaccggtg agtcaccaat
   atcacgagat aataattttt tgcaacaatg caatttgttt tcagAATGCG ACGCAACAAA TTCGTTCCAG
   TGTCAAGATG GCCGATGCAT ACCGATGTCG TGGCGTTGTG ATGGAGATAT CGACTGCCAG AATGAAGAAG
20  ATGAGAAAAA TTGTCCAAgt aaaactcttt ttcctaaaaa aacaatgata atttcaatga tagtttcagA
   AGTTTGTGGC GCCGAAGAAC ACAAATGCGG AGAAGTCAAA TCTGCTCGAT CATCGTTGGA AAGATTCAAG
   TGCATTCCGA ACAAATGGGT GTGTGATGGA GAATTCGACT GTGAAGATAA ATCGGACGAA TTCCAATGCA
   AAAgtatgtt caattgaatt caagacagtt ttcctgcaat ttttcaatct tttcagACGT ATCATGCCAA
   GAAAAACAGT TTCAATGTGA AGAACTCTCT GGTGATTATA GTTTGTGCAT TCCTGAAACA TGGGTTTGCG
25  ATGGTCAAAG AGACTGTACG AATGGCAAAG ACGAACAGAA TTGCACGTCA AAAACGTCTA AATGTCCGGA
   TAACAACCTC CAgtaagtct ccatacaaat cttatcgcaa ttaaactctat cccgttgacc taattgtacc
   actctgacaa aattgagaaa aaagtgtttc atttttcagG TGTAGCAATG GAAATGTAT TTTCAAAAAC
   TGGGTTTGTG ATGGGGAAGA AGATTGCTCA GATGGCTCAG ATGAATTGCT CACTGCTCCA TCCAATTGTA
   ACCGAACAGT TAATCAATGC CCTCCCGGAG AAATGTGGAA Ggtatgagtg ttacggatc ttgagaaaaat
30  gtttatgctg agcatgttga aatatttgtt tgtttctcga ttgttttagag ggtcaaaagta tcgagtgttg
   gctatgctag tgtcaaacca actgataata agtaaaatat attatattga taattcaatt aatatctatt
   tgtctcataa tatagacttt attaaataca taatacatat tagaaaagaa aaataattca ataagctgga
   gtaagaaatt atcatttttca gtcttttctt tgtcaattga ttgtgtattg cagtcgattg ttatctgtta
   gtgaccattt ctcccccgca atcacgtctg ggaaattgat atgtatttct gaattaaaca attaaatttt
35  cagTGTGGAT CCGGTGAATG CATTCCATCA AGATGGCGAT GCGACGAGA AGTCGATTGC AAAGATCATT
   CCGATGAGAA GAATTGTACT GCTATTCAAC ACACGTGCAA GTTAGCAGAG gtaggatggg ggcaatatgc
   acctgcttga tgctaattgca acatggtcat taaaatatta gatgtcacc atattagata ggctaattgg
   gttttaaatc attaaatgat gagaaattta acaaccat tatagttcca aaatgcaata acttcagGAA
   TTCGCTTGTA AAGCTTCACA CAACTGCATC AACAAGGCTT TCGTATGTGA TGGAGAACTT GATTGTTCCG
40  ATGGATCCGA CGAAGATGAT TGTGCTGACG TTCGGACCGA GTGTAAATCC GGAGAGCGTA CCTGCCAGC
   TTCATACGGT GCATATGGCG CCGAGTCAGG TCACGTTGTG TGTATTCCTG CATCGTCATG GTGCAATGGA
   GAAGAGGATT GTCCAGATGG TGGTGATGAG AAAGAATGTA ATATGACTGC TCCTGgtaag taatattagc
   aaaagtgtt gaaatatatt cgttatattt tcagTCACAT GCCAGAAAGG AACCGAATAT GAATGTCCAT
   CTACTCCATT GCAATGTATT GAAATGTCAA AATTGTGTGC TAGTGCTCAA TTTGATTGTG GGGATGGAAA
45  TATGCTGTGTT TGTAGCCAGA AAAAGATCAT TGgtaatata aatatttatt tatggtctgg caaatgctc
   ttcaattaca gAAATGTGCA AACCAAGTTC AGAAGATGTG GTCTGCCGTC CATCGTTTGT CCGAGGAAAT
   AATGTTTGTG ACTGTAAAGA TGGTTACAAA CTCGAAAACG GACAGTGCAT TGgtgagtaa ttggttagcaa
   gagagatggg ttagcgagaa acaaaatagt gaaaaagaca aagagatcct catcaaaatg tagaaaaata
   gttgagatgc gaagcgagca gctgaacaat cagcaatatg aaaacacagg aagtattttc taataacgaa
50  atgttttatt ttccagATATT AACGAATGTG AAATTGCTGG CGTTTGTGAT CAAATTTGTC TCAATATTCC
   CGGTTCTTAT CGTTGTGCTT GTCATGCTGG ATATCAGATT AGTTTCGGAG ATACTAAAAT TGGATCAGGA
   AGAATTGCTA ACAAATGTCG TGCTATGGGA GGTGATCCAT TGGTTCTTCT TACCAACAGA CATACGATCA
   GACAATTTGA TCTTGTCAAT AAAATGCACT TCCCTGTTTC CAGTAGTCCT GGTTCGCGG TTGCCATGGA
   TTTCCACATC TTGAACGGGg tgagttgaat tttttattac ggattgttat tatttacttg agaagaatac
55  caaaaaatct gattttaata taattttttc agACACTGAT TTGGTCTGAC GTGTTGTCAA AGCAAATTCT
   GAAATGTTTC ATTGGAAACG TGTCAAACGC ATTTTGGGA ACCGATATGT GCGATAAGAA GCATGAAATC
   GTTCTCACAG GAGACAAGAT TCATACTCCA GATGGACTTG CAGTTGATTG GGTTCATGAT CTCCTTTTCT

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GGACAGATGG AGGCCTTGAT CAAATTAATG TTCTCGATAT GAAAAATGGA AAGCAGCGTG TCCTTTATTC
TTCCGACTTG GAAGAACCGA GAGCTATTGC AGTTGATCCT GAAGTTGGAC TCATTTTCTG GACTGATTGG
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GTGTTGTATG GCCGAATGGA TTGGCTTTGG ATTATGTTGA TAAGCGTGTC TATTGGCTGA TGCCAAGATC
5 AAGTCAATCT TCAGTTgtga ttattggggc aaaaatatca agaccgtatt gcattctcat caatatctaa
ggcatccatt ctcaatggct gttttcgaag accgactctt ctacacagat tgggagcatg atggtgttat
cactgttaac aaggtatggt ttttaaaatg aaattttaac ttggaaaact ggttttttaa aacgaaattc
gctgaaaatt cgctggaacc atgaaacttt gaatattgaa gacaatttta atgaaaattg tctacacgaa
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GCCGAGAGCC GTTTACCGTG AGAAAGAACG TGTCATGAA AAAACTTGGC ACGACAGACC GTTCTCGTGT
GCATGCGAAG GAACGACTGC TTCTGATGTT CTGGAATGTT TCGgtaggac aatcaattag gtatttagat
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15 TTTTATGTGT TGGTGGAGTT GTGGCCGCTG GATTGTGAT TGTTTCGTCG AAGATGGGAC CTCGTACATT
TACCGCTCTC AATTTTGACA ATCCAATTTA TCGTCGAACC ACCGAAGAAG CTGATCATCA GATGGAAGAT
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gatttttcat gtgcaattga ctcaaactcg agaaatcact gtgaagacgt gtagatccaa actgtgaaaa
tttccaaaaa tcctccaaat tttgcgtggt tatctattcc gaatggtttg gatagtattt tgcacgagt
ctagatttca tgtattcatt gctttcatta ttctcattgc tatatcatta ttttctgtgt gctccatcca
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25 tggttaatttt gagttttcct gactgtcgac ccccgagaac tgatgcatat acccttgtct atctgcccct
tccctcccc ttcctctcat caacggattt attcaataaa
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Figure 11E

lpo-1 cDNA

SEQ ID NO:2

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   gatgtcgtgg cgtttgtgat gagatatcga ctgccagaat gaagaagatg agaaaaattg tccaaaagtt
   tgtggcgccg aagaacacaa atgcggagaa Gtcaaactcg ctcgatcatc gttggaaaga ttcaagtgca
   ttccgaacaa atgggtgtgt Gatggagaat tcgactgtga agataaatcg gacgaattcc aatgcaaaaa
   cgtatcatgc caagaaaaac agtttcaatg tgaagaactc tctggtgatt atagtttgtg cattcctgaa
10  acatggggtt gcgatgggtc aagagactgt acgaatggca aagacgaaca gaattgcacg tcaaaaacgt
   ctaaatgtcc ggataacaac ttccagtgtg gcaatggaaa ttgtattttc aaaaactggg ttttgtatgg
   ggaagaagat tgctcagatg gtcagatga attgctcact gtcctatcca attgtaaccg aacagttaat
   caatgccctc ccggagaaat gtggaagtgt ggatccggtg aatgcattcc atcaagatgg cgatgcgacg
   cagaagtcca ttgcaaagat cattccgatg agaagaattg tactgctatt caacacacgt gcaagtttagc
15  agaggaattc gcttgtaaag cttcacacaa ctgcatcaac aaggctttcg tatgtgatgg agaacttgat
   tgttccgatg gatccgacga agatgattgt gctgacgttc ggaccgagtg taaatccgga gagcgtacct
   gccagcttc atacgggtgca tatggcgccg agtcagggtc cgttggtgtg attcctgcat cgtcatggtg
   caatggagaa caggattgtc cagatggtg tgatgagaaa gaatgtaata tgactgctcc tgtcacatgc
   cagaaaggaa ccgaatatga atgtccatct actccattgc aatgtattga aatgtcaaaa ttgtgtgcta
20  gtgctcaatt tgatttgtgg gatggaataa tgtctgtttg tagccagaaa aagatcattg aaatgtgcaa
   accaagttca gaaggatgtg tctgccgtcc atcgtttgtc cgaggaaaata atgtttgtca ctgtaaagat
   gggtacaaac tcgaaaacgg acagtgcatt gatattaacg aatgtgaaat tgctggcggt tgtgatcaaa
   tttgtctcaa tattcccggt tcctatcggt gtgcttgta tgctggatat cagattagtt tcggagatac
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   ctgcggttgc catggatttc cacatcttga acgggacact gatttggtct gacgtgttgt caaagcaaat
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   atcgttctca caggagacaa gattcatact ccagatggac ttgcagttga ttgggttcat gatctccttt
   tctggacaga tggaggcctt gatcaaatta atgttctcga tatgaaaaat ggaaagcagc gtgtccttta
30  ttcttccgac ttggaagaac cgagagctat tgcagttgat cctgaagtgt gactcatttt ctggactgat
   tggggaaaaga aggcgagaat cgaaagatct ggaatggatg gacaacatcg tactgttatt gttgaggag
   atcgtgttgt atggccgaat ggattggctt tggattatgt tgataagcgt gtctattggc tgatgccaag
   atcaagtcaa tcttcagttt tcactggagc tgatattcgt actgttatgg atcaagtga gtcctcaatg
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   ttgttcgtcg gaagatggga ctcgtacat ttaccgctct caattttgac aatccaattt atcgtcgaac
   caccgaagaa gctgatcatc agatggaaga tccattccgt gatccttttg ctgaaccacg gaatggaaga
40  gggcgtaacg atggattacc aactcttgca tctgctgaca atgaaacacg ggctgacgca ttgagcttct
   ga
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Figure 11F

LPO-1

SEQ ID NO:3

5 MRTCLTLTGF LLISMATISV GLQPMGAPTR KCDATNSFQC QDGRICIPMSW RCDGDIDCQN EEDEKNCPKV
CGAEHHCCE VKSARSSLER FKCI PNK WVC DGEFDCEDKS DEFQCKNVSC QEKQFQCEEL SGDYSLCIPE
TWVCDGQRDC TNGKDEQNCT SKTSKCPDNN FQCSNGNCIF KNWVCDGEED CSDGSDELLT APSNCNRTVN
QCPPGEMWKC GSGECIPSRW RCDAEVDCKD HSDEKNCTAI QHTCKLAEEF ACKASHNCIN KAFVCDGELD
CSDGSDEDDC ADVRTECKSG ERTCPASYGA YGAESGHVVC IPASSWCNGE EDCPDGGDEK ECNMTAPVTC
10 QKGTEYECPS TPLQCIEMSK LCASAFDCG DGNMSVCSQK KIIEMCKPSS EGCVCPRPSFV RGNNVCHCKD
GYKLENGQCI DINECEIAGV CDQICLNIPG SYRCACHAGY QISFGDTKIG SGRIANKCRA MGGDPLVLLT
NRHTIRQFDL VNKMHPVSS SPGSAMVAMDF HILNGTLIWS DVLSKQILKC SIGNVSNAFL GTDMCDKKHE
IVLTGDKIHT PDGLAVDWHV DLLFWDGGL DQINVLDMMN GKQVLYSSD LEEPRAIAD TVMDQVKSPM
WGKKARIERS GMDGQHRTVI VEGDRVWPN GLALDYVDKR VYWLMPRSSQ SSVFTGADIR TVMDQVKSPM
TVRIYHKQAQ PLMQNKCENS ECDHLCLPRA VYREKERVHE KTWHDRPFSC ACEGTTASDV LECFADLETK
15 SGISMFTIFL LLCVGGVVA GFVIVRRKMG PRTFTALNFD NPIYRRTTEE ADHQMEDPFR DPFAEPRNGR
GRNDGLPTLA SADNETRADA LSF

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Figure 11G

5	RAT human lpo-1	MGTSARWALWLLALCWAPRDSGATASGKKAKCDSSQFQCTNGRCITLLWKCDGDEDCTD 60 MGTSALWALWLLALCWAPRESGATGTGRKAKCEPSQFQCTNGRCITLLWKCDGDEDCTD 60 MRTCLTLTGFLISMATISVGLQPMGAPTRKCDATNSFQCQDGRICIPMSWRCDGDIDCQN 60 * * . : : * : : . . . : : . . . * : : * : : * : : * : : *	(SEQ ID NO:10) (SEQ ID NO:9) (SEQ ID NO:3)
10	RAT human lpo-1	GSDEKNCVKKTCAESDFVCKNG-----QCVPNRWQCDGDPDCEDGSDSPEQCHMR 111 GSDEKNCVKKTCAESDFVCNNG-----QCVPSRWKCDGDPDCEDGSDSPEQCHMR 111 EEDKNCVKVCGAEHKKCEVKSARSSLERFKCIPNKWVCDGEFDCEDKSDE--FQCKNV 118 . * : : * : : . : : : : . : : * : : * : : * : : * : : *	
15	RAT human lpo-1	TCRINEISCGARS---TQCIPESWRCDGENDCDNGEENCGNIT--CSADEFTCSSGRC 166 TCRIHEISCGAHS---TQCIPESWRCDGENDCDNGEENCGNIT--CSPDEFTCSSGRC 166 SCQEKQFQCEELSGDYSLCIPETWVCDGQRDCTNGKDEQNCTSKTSCPDNNFQCSNGNC 178 : * : : : * . . : * : * : * : * : * : * : * : * : * : * : *	
20	RAT human lpo-1	VSRNFVCGQDDCDDGSDDELDCAPPTCG-----AHEFQCRTSSCIPLSWVCDDDADC 218 ISRNFCVCGQDDCSDGSDDELDCAPPTCG-----AHEFQCTSSCIPISWVCDDDADC 218 IFKNWVCDGEEDCSDGSDDELDTAPSNCRNRTVNQCPCGEMWCKGSGECIPSRWRCDAEVDC 238 : : * : * : * : * : * : * : * : * : * : * : * : * : * : *	
25	RAT human lpo-1	SDQSDLESLEQCGRQPVHTKCPTEIQCQSGE-CIHKKWRCDGDPDCCKDGSDEVNCPSPR- 276 SDQSDLESLEQCGRQPVHTKCPASEIQCQSGE-CIHKKWRCDGDPDCCKDGSDEVNCPSPR- 276 KDHSD-----KNCTAIQHTCKLAEEFACKASHNCINKAFVCDGELDCSDGSDDEDDCADVR 294 . * : * : . . : * : . : * : * : * : * : * : * : * : *	
30	RAT human lpo-1	-TCRPDQFECEDGS-----CIHGSRQCNGIRDCVDGSDDEVNCKNVN--QCLGPG 322 -TCRPDQFECEDGS-----CIHGSRQCNGIRDCVDGSDDEVNCKNVN--QCLGPG 322 TECKSGERTCPASYGAYGAESGHVVCIPASSWCNGEEDCPDGGDEKECNMTAPVTCQKGT 354 : * : : : * . . : : : . . . * : * : * : * : * : * : * : *	
35	RAT human lpo-1	KFKCRSG--ECIDITKVCQD-QEQDCRDWSDEPLKECHINECLVNNGGCSHICKDLVIG-Y 378 KFKCRSG--ECIDISKVCN-QEQDCRDWSDEPLKECHINECLVNNGGCSHICKDLVIG-Y 378 EYECPTPLQCIEMSKLCASQFDCGDNMSVCSQKKIEMCKPSSGCVCRPSFVRGN 414 : : * : * . : * : : * : : : * : * . . : : * : . . . : * : *	
40	RAT human lpo-1	BCDCAAGFELIDRKTCDGIDECQNPICISQICINLKGKYKCECSRGYQMDLATG----- 432 BCDCAAGFELIDRKTCDGIDECQNPICISQICINLKGKYKCECSRGYQMDLATG----- 432 VCHCKDGYKLEN-GQCIDINECEIAGVCDQICLNIPGSYRCACHAGYQISFGDTKIGSGR 473 * . * : : * : . * : * : * : . * : * : * : * : * : * : *	
45	RAT human lpo-1	---VCKAVGKEPSLIFTNRRDIRKIGLERKEYIQLVEQLRNTVALDADIAAQKLFWADLS 489 ---VCKAVGKEPSLIFTNRRDIRKIGLERKEYIQLVEQLRNTVALDADIAAQKLFWADLS 489 IANKCRAMGGDPLVLLTNRHTIRQFDLVNKMHPVSSSPGSAMVDFHILNGTLIWSVDL 533 : . * : * : * : : * : : * : * : * : * : * : * : * : *	
50	RAT human lpo-1	QKAIFSASID-----DKVGRHVKMIDNVNPAIAVDWVYKTIYWTDAASKTI 537 QKAIFSASID-----DKVGRHVKMIDNVNPAIAVDWVYKTIYWTDAASKTI 537 SKQILKCSIGNVSNALFTGDMCDKKHEIVLTGDKIHTPDGLAVDWVHDLFWTDGGLDQI 593 . * * : : * : . . : . . * : . . * : : * : : * : : * : : *	
55	RAT human lpo-1	SVATLDGTGTRKFLFNSDLREPASIAVDPLSGFVYWSWGEPAKIEKAGMNGFDRRPLVTE 597 SVATLDGTGTRKFLFNSDLREPASIAVDPLSGFVYWSWGEPAKIEKAGMNGFDRRPLVTA 597 NVLDKMGNGKQVLYSSDLEEPRAIAVDPEVGLIFWTDWGGKARIERSGMDGQHRVIVEG 653 . * : . . * : : * : : * : * : * : * : * : * : * : * : *	
60	RAT human lpo-1	D-IQWPNGITLDLVKSRLYWLDSKLHMLSSVDLNGQDRRIVLKSLEFLAHLPLALTIFEDR 656 D-IQWPNGITLDLKSRLYWLDSKLHMLSSVDLNGQDRRIVLKSLEFLAHLPLALTIFEDR 656 DRVVWPNGLALDYVDKRVYWLMPRSSQSS----- 682 * : * : * : * : * : * : * : * : *	
65	RAT human lpo-1	VYWIDGENEAVYGANKFTGSELATLVNNLNDAQDIIYHELVPQSGKNWCEEDMENGGE 716 VYWIDGENEAVYGANKFTGSELATLVNNLNDAQDIIYHELVPQSGKNWCEEDMENGGE 716 -----VFTGADIRTVMDQVKSPMTVRIYHKQAQPLMKNKENSE----CD 723 * : : * : : * : : : : . : * : * : * : * : *	
70	RAT human lpo-1	YLCLPAPQINDHSPKYTCSCPNNGYNLEENGRECQSTSTPTVYSETKDVTNTDILRTSGLV 776 YLCLPAPQINDHSPKYTCSCPNNGYNLEENGRECQSTSTPTVYSETKDVTNTDILRTSGLV 776 HLCLPRAVYREKE-----RVHEKTWHDPRFSCACEGTTASDVLECFADLET 770	

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:***** : : : : * . . . :

5 RAT
human
lpo-1

PGGINVTTAVSEVSVPPKGTSAAWAILPLLLLVMAAVGGYLMWRNWQHKNMKS MNFDNPV 836
PGGINVTTAVSEVSVPPKGTSAAWAILPLLLLVMAAVGGYLMWRNWQHKNMKS MNFDNPV 836
SG-----ISMFTIFLLLCVGGVVAAGFVIVRRKMGPRFTALNFDNPI 813
. * * : * * : : . * . * : : * : : . . . : *****:

10 RAT
human
lpo-1

YLKTTEEDLSIDIG-----RHSASVGHTYPAISVVSTDDDLA---- 873
YLKTTEEDLSIDIG-----RHSASVGHTYPAISVVSTDDDLA---- 873
YRRTTEADHQMEDPFRDPFAEPRNGRNDGLPTLASADNETRADALSF 863
* :

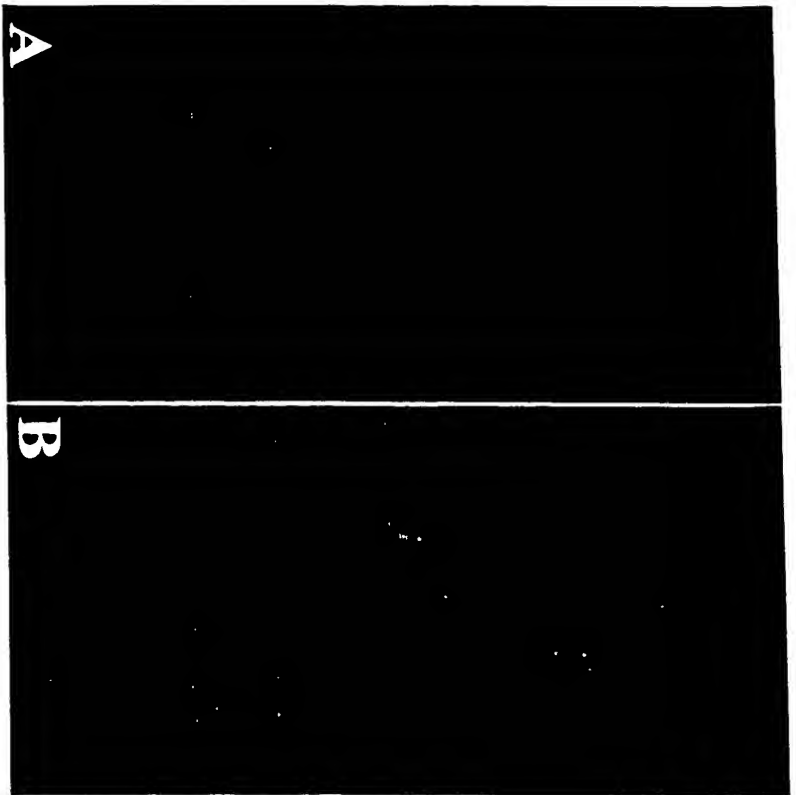
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FIGURES 12A-12C



12C

■ ABC transporter region
| transmembrane region

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Figure 12D

LPO-3 Unspliced DNA (7496 bp)

SEQ ID NO:4

	tctccacttt	caactggtca	gagacgtcgt	ctttaacatc	ttccccgtcg	tcttccgcct	aaaaaagtgc
5	gaaaagaaac	atcaacagaa	aacaatgaat	tgatcactac	aattatataa	atttgccttt	cttcctatca
	catatcactt	cgtctgtctg	cgtctctatc	acttttattat	cttcaatatac	ccacattatc	tcggttggcc
	tggaaacctt	tcagtcggtt	tttcttaaaa	ctattcatcg	tcagcaacct	cgtcatctta	aaaaattaga
	aaaattggaa	gaaaaaagag	aaataaaaaa	ggggtggagc	ctagacacct	tcaacacata	tttttaatta
	aagacgccct	tttttcggaa	gacctttctc	tccgctttcc	ccccattatt	ttctattatt	atctaactg
10	ATGAAAAGCC	GAAAAACGA	GCCCACCTGG	GTGACTAAGC	CTCTGCTTAA	ACGgtatgag	ttgtcaagag
	attctctgaa	aaaaacctaa	aatttttgaa	tattcaaaac	agataatttc	agattctagt	aatttggat
	aattccaaaa	taaaaaatat	aaacatttta	cagCTCTCAT	TCAAGTGACT	CTTCAATCGA	TGAATCAACT
	GTTAAACTCA	CAAAATATGG	GATATTCTAT	TACACTCAAG	GAGTTGATCT	ACTTCTTTTA	ATTACTGGAA
	CAGTTGCAGC	AGTTATTCAT	GGAGCTGGTT	TTCCGTTACT	TGCTATTGgt	atgtgggttt	attttttaat
15	ttgaatgata	aatcaaaagc	tgaaattatc	atttgaaacg	tcaactacat	ataattttat	aaaatgttat
	tatgagaact	catagtcaga	attaattttt	tttttgaaaa	atthagtaaa	ctctaatac	cgttcaacat
	tcacaaaatg	acctccgata	tcgtcatcca	atccaataaa	ctactcgcac	taccatttaa	cttaattaga
	tcaaaatgtt	catgacatca	tttgaactag	agaaaaaaag	tgatttgtgt	tgtgggtttg	aactatggaa
	ttggaggctt	tttatattct	tcaaaaaagg	aaaatgtgtt	aagttgaaat	ttatcagctc	cttaaaacaa
20	attcgaaata	catgagatat	cataggctga	aaattgtgat	atttaataat	tgcattagggt	tgtatttaaa
	aatttaaaaa	atacactaac	taagaagtcg	aacagattca	aatatcataa	ctaaacaatc	aaaaaatctc
	tatagaaaat	gtggactttt	tgagaatttt	gagaattttt	gcgggtttga	agtcaagttt	ccgaaaacaa
	aataattaaa	atataaaact	cgtagaatat	gtatttttag	ttgacttcca	aaattatgat	aatcaaaaaa
	taagggattg	gcactttttc	gactgttgat	aagaaatttc	aaataatggt	tgaaaattta	cattttgggtc
25	atttaaaaat	gttatacaaa	tgagtgggtt	taaataactt	tctccattaa	cgaacattct	tggccccgca
	gtaaaatcaa	ttagatagtt	aaaagcagaa	acgatgattt	caaagtcttc	gtatttgcag	TTCTCGGAGG
	AATGACAACA	GTGTTTTTAC	GAGCTCAAAA	CTCGGATTTC	GTCGTTGGTG	TGGATAATGT	GAACCCGGAA
	GGATTGGTCC	CGATATCTCT	gtacgttttt	ttttagaactt	tgactttttac	tttttatgat	cctgcaaatt
	tttgtatttg	tatctttttg	actagtcaat	ctgcgcgaaa	tgataaggct	atccaaaaca	gctgggtgtgt
30	cttttgacac	cttttctagt	tccttgtgaa	tgaacacata	aattattatat	tacacttttt	tactaaacaa
	aaaaccttcc	aatctgtttt	cttttttagA	GATGAATTCA	ACTCGGAAGT	TGTCAAGTAT	TGTATCTACT
	ACCTGGTTCT	TGGTGACTC	ATGTTCTTCA	CTTCATATGT	ACAAATCGCT	TGTTTTGAGT	CGTACGCAGA
	GAGATTGGTG	CATAAATTAA	GACAAACTA	CCTGAAAGCC	ATACTCAGAC	AACAAATTCA	ATGGTTCGAC
	AAACAACAGA	CCGGAATTTT	AACGGCTAGA	CTCACGGAg	aagttaagaa	gtacattttt	tgaagaatga
35	tagagaagtg	agacatgtta	tatacatata	atgagctttt	gccgttcgtc	aaatttttct	agaaattcat
	ctaaattccc	ggaagatcac	taaagatatt	gcaaataata	aatcatcggt	aatcttttta	ttgcagCGAT
	TTGGAGCGTG	TCCGTGAAGG	ATTAGGTGAC	AAATTCGCCC	TTCTTGTTCA	AATGTTTGCT	GCTTCTTG
	CTGGATACGG	AGTTGGCTTC	TTTTATAGTT	GGTCAATGAC	ACTGGTTATG	ATGGGATTTG	CTCCGTTGAT
	TGTGCTCTCT	GGTGCCAAAA	TGAGCAAAAG	CATGGCAACG	CGAACAAGAG	TTGAACAAGA	AACGTATGCA
40	GTCGCTGGTG	CAATTGCAGA	AGAAACATTC	TCTTCGATTA	GAACAGTTCA	TTCATTAAAT	GGACATAAAA
	GAGAATTGGA	TAGATTTTAT	AACGCATTGG	AAGTTGGAAG	ACAAACTGGA	ATTGTTAAAT	ATTGTTATAT
	GGGTATTGGA	GTTGGGTTCA	GTAATTTGTG	TATGTACTCT	TCATATGCAT	TGGCATTTTG	GTATGGAAGT
	ACTCTGATTA	TCAATGATCC	TACTTTTGAT	CGCGGTCTTA	TTTTTACGgt	tagtcatttt	tcaattcaaa
	aattcatgct	tataaagcag	tcatttaaaa	tattaaagag	agagtaccgt	ttctgtcccc	aaactcaaaa
45	tgtcttcaaa	atttttattg	aaaaagggct	tgatttttaag	ctacaatctc	cattttttgc	aagtattaat
	ttcttattat	taaaaacaag	tgaacaattc	taattttcag	GTTTTCTTCG	CAGTCTCTC	GGGTCTACA
	TCTCTCGGTG	GCGCCCTTCC	ACATCTTGCA	AGTTTTGGAA	CAGCTCGCGG	AGCAGCTTCA	ACAGTATTAC
	GTGTAATCAA	CTCGCACCCA	AAAATCGATC	CATATTCACT	TGAAGGAATT	CTCGTGGACA	ATATGAAGGG
	AGATATTTCA	TTCAAAGATG	TTCATTTCGG	ATATCCATCT	CGAAAAGATA	TTCATGTATT	AAAAGGAATT
50	TCTCTGGAAC	TGAAAGCTGG	TGATAAAATT	GCTTTGGTCG	GTTCAAGTGG	TTGTGGAAAA	TCAACAATTG
	TTAATTTACT	TCAAAGATTC	TATGATCCAA	CAAAAGGAAG	AGTTTTAATT	GATGGAGTTG	ATTTACGAGA
	AGTAAATGTT	CATAGTCTTC	GTGAACAAAT	TGGAATTGTT	AGTCAAGAGC	CAGTACTTTT	CGATGGAACA
	ATTTATGAAA	ATATTAAAAT	GGGAAATGAG	CATGCTACTC	ATGATCAAGT	CGTTGAAGCG	TGTAAAATGG
	CAAATGCAAA	TGATTTTATC	AAAAGATTGC	CTGATGGATA	TGGAACAAGA	GTTGGAGAAA	AAGGAGTTCA
55	ATTAAGTGGA	GGACAGAAAC	AAAGAATTGg	ttagttattc	agttgaaaca	tctaaaattg	gaaaagatcc
	tttagaagtt	cactcgaaat	tcaaaaatac	gaaagtcac	gttttaattt	aaaaaaaaat	tatacattta
	catatatctt	atattccagC	CATTGCACGT	GCTCTGTGCA	AAAATCCAAA	AATCCTTTTG	CTCGACGAAG

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	CCACATCCGC	TCTCGACACG	GAAGCTGAGA	GAGAAGTTCA	AGGTGCATTG	GATCAGGCAC	AAGCTGGAAG
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	GGAAATATTG	TTGAATCTGG	AAGTCATGAG	GAATTAATGA	GCAAACAAGG	AATCTTCTAC	GATATGACAC
	AGGCTCAAGT	TGTTGACAAA	CAGCAACAGG	AAGCAGGAAA	AGgtaattct	aatgttttaag	gaaaactaat
5	atagattaaa	tttcagATAT	TGAAGACACT	ATTTCTGAGT	CAGCTCATTG	CCATCTCAGC	AGAAAGTCTT
	CCACAAGAAG	TGCCATTTC	ATTGCAACAT	CTATTCATCA	GCTCGCTGAG	GAGGTTGAGg	tacgaaaata
	attacttatt	tcttttggtt	tttgaagggtg	gagtatcgtc	agtggggatt	tactacatgc	ataatagtca
	cacttgacca	aatataaaac	ctctacaaat	tttttagatat	tccatttttga	gattaagaga	gttttgataa
	attggcaaat	gtttgaaaaa	ttgggctttt	caaagaaatt	taagcaatgc	cgcatgttcg	atcttctaca
10	acggttatat	acaaattatc	aaaaaacaca	attaaaatgt	gaaactggta	gagaaaaaat	ttttagtcca
	cttcctcaaat	tatgagttgc	gaaacctgag	gaatttcaac	ttattgactg	taaaaaatta	atataatttt
	tgaaaaat	taaaaagcta	ttcagatatt	tgaccataat	atgtaggtgt	aattctctta	ctggcgctac
	tccatccttt	aaaaataaat	attcaaaaat	gtgttcttta	actgaaatcc	atttcaacta	aaatccaaaa
	caattatagt	tattcccaaa	atattccagc	taattgaccc	attcaatggt	caaacgaatc	aagatgtgat
15	aagatctcgt	attttatcag	catttggtggg	tgtaagtgat	agatgaatat	attcggtttt	caatgtttca
	tttcaacttc	tctcctttct	ctgattcttc	cttacatttt	cttcaaacac	ggcttcttct	aagtacttat
	cagcatgctt	ttatatgtgt	tttttggttc	aatgatcaat	ttttttttaa	tttttcttaa	tttaacaaaa
	taactttcag	GAATGCAAGG	CTCCACCCAC	CTCAATGTTT	AAAATATTCA	AATTCAACGG	AGACAAAGTC
	GGATGGTTTA	TTGGTGGAAT	TTTTGGAGCA	TTTATTTTTG	GATCAGTTAC	TCCAGTTTTT	GCTCTGTGAT
20	ATGCTGAAAT	TTTCAATgta	attttttaga	aatattaaag	tagaagtaaa	actgtacatt	tttcagGTAT
	ACTCTTTGCC	AGCTGATCAA	ATGCAAGCAA	ATGTGTATTT	CTGGTGTGGA	ATGTTTGTTT	TTATGGGAAT
	CACTTTCTTC	GTTGGATTCT	TCACTTCTGC	AAATTGCCTC	GGACGATGTG	GAGAGTCACT	GACAAATGAAG
	TTGAGATTTG	AAGCATTCAA	GAATTTATTA	AGACAAGATA	TCGCTTTTTA	TGATGATTTG	AGACATGGAA
	CTGGAAAATT	GTGCACAAGA	TTTGCAACTG	ATGCTCCGAA	TGTTGATAT	GTATTCACAA	GACTTCCAGT
25	TGTTTTAGCA	TCAATGTGTA	CTATTTGTGG	AGCTCTGGGA	ATTGGATTCT	ATTACGGATG	GCAACTTGCC
	TTGATTCTTG	TCGTAATGGT	TCCACTACTT	GTAATGGGAG	GATATTTGCA	AATGCAAATG	AGATTGGGAA
	AACAAATAAG	AGATACTCAA	TTGTTGGAAG	AAGCTGGAAA	AGTAGCTTCA	CAGGCTGTTG	AACACATTCT
	AACACTTAAT	AGTTTAAATC	GTCAGGAACA	ATTTCATTTT	ACATACTGTG	AATATCTTCG	GGAAACCATC
	AATACTAATC	TGAAACATGC	ACATACATAT	GGAGCTGTAT	TTGCATTCTC	TCAATCTCTT	ATTTTCTTCA
30	TGTATGCTGC	TGCATTCTAT	CTTGGAAGTA	TTTTTGTA	TCAACAAGCT	ATGCAACCAA	TTGATGTCTA
	TCGAGTATTC	TTTGCTATTT	CATTCTGTGG	ACAAATGATT	GGAAATACTA	CATCTTTTAT	TCCTGATGTC
	GTAAAAGCTC	GTCTTGCTGC	TTCTCTTTTG	TTCTATCTTA	TTGAACATCC	AACACCTATT	GATTCTCTAT
	CTGATAGTGG	AATTGTGAAG	CCGATAACTG	GAAATATTTT	AATCAGAAAAT	GTATTTTTTCA	ATTATCCAAC
	AAGAAAGGAT	ACCAAGGTTT	TACAAGGATT	CACTCTTGAT	gtaggtttta	atgtgatacc	tgacttctat
35	atgacagtag	tgcaatccta	gggtaaaaag	caataagcct	tgactttttaa	aaactggata	tggatttttt
	ttgctgtttt	gtatcgaaatg	tttatgcact	tgccctctga	cttttttact	gaaatttttaa	aaataggaaa
	aaaaaaaaag	acaatgatcc	tacaattctt	aaccacactg	taaaaacaaa	tattaatata	tttatttttag
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40	aaacaatttt	agATGATTGA	TGGTGATAAC	ATCCGTAACC	TAAACATCAG	TTCACTTCGC	GAACAAGTAT
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	AAATGTTACA	TATCAAGAAA	TTGTTGAAGC	TGCCAAAATG	GCAAATATTC	ACAATTTTCT	TCTAGGATTG
	CCAGATgtag	ggtgatattt	tcataaatca	gaactcattc	taaaaatttc	agGGTTATGA	TACTCATGTC
	GGAGAGAAA	GAACTCAACT	TTCGGGTGGT	CAAAAACAAA	GAATTGCCAT	TGCACGGGCA	CTTGTTTCGAT
45	CTCCTTCTGT	TTTACTTTTG	GATGAAGCAA	CTAGTGCAAT	AGATACGGAA	AGTGAAAAGg	tttgtatgaa
	aaatattgaa	atagcaaat	gactttgaag	aatatcggtt	tattcactgt	ttacagATTG	TACAAGAAGC
	ATTGGACGCC	GCAAAAACAAG	GTCGCACGTG	TCTTGTCATT	GCTCATCGGT	TGAGCACAAT	TCAAATAGT
	GACGTCATTG	CGATCGTCAG	TGAGGGTAAA	ATTGTGGA	AGGGAACACA	TGACGAGTTG	ATAAGGAAGA
	GTGAAATATA	TCAGAAATTC	TGTGAAACGC	AGAGGATTGT	CGAAAGTCAA	TAAttttaa	atgtattaga
50	ttctcaaaca	cgagttttaca	aactaatgtg	catggagttt	cattttttt	atgtttcaatt	gaaacagctt
	gatattttaaa	attttaaata	gctcatcaag	taaaatttt	agaaaat	gtaaacccgt	aataat
	ttgtcatcta	ggtacttttgc	tttttcccca	aatagcctt	ccctccatct	tgtgtatttt	gtgtgaaatt
	ctttgaattg	tgataattat	ctttgaattg	tgataattgt	ctttttgttt	tcttttttaa	atatattatt
55	taccat						

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Figure 12E

lpo-3

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SEQ ID NO:5

```
5 atgaaaagcc gaaaaaacga gccacttgg gtgactaagc ctctgcttaa acgctctcat tcaagtgact
  cttcaatcga tgaatcaact gttaaactca caaattatgg gatattctat tacactcaag gagttgatct
  acttctttta attactggaa cagttgcagc agttattcat ggagctggtt ttccggtact tgctattggt
  ctcggaggaa tgacaacagt gtttttacga gctcaaaact cggatttcgt cggttggtgtg gataatgtga
  acccggaagg attggtcccg atatctctag atgaattcaa ctcggaagtt gtcaagtatt gtatctacta
  cctggttctt ggtgtactca tgttcttcac ttcatatgta caaatcgctt gttttgagtc gtacgcagag
10 agattggtgc ataaattaag acaaaactac ctgaaagcca tactcagaca acaaatcaa tggttcgaca
  aacaacagac cggaaattta acggctagac tcacggacga tttggagcgt gtccgtgaag gattaggtga
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15 gaagttggaa gacaaactgg aattgtttaa tattgttata tgggtattgg agttgggttc agtaatttgt
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  tcgcggtctt atttttacgg ttttcttcgc agttctctcg ggttctacat ctctcggtgg cgcccttcca
  catcttgcaa gttttggaac agctcgcgga gcagcttcaa cagtattacg tgtaatcaac tcgcacccaa
20 aaatcgatcc atattcactt gaaggaattc tcgtggacaa tatgaaggga gatatttcat tcaaagatgt
  tcatttccga tatccatctc gaaaagatat tcatgtatta aaaggaattt ctctggaact gaaagctggt
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  atgatccaac aaaaggaaga gttttaattg atggagttga tttacgagaa gtaaatgttc atagtcttcg
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25 ggaaatgagc atgctactca tgatcaagtc gttgaagcgt gtaaaatggc aaatgcaaat gattttatca
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  tttattggtg gaatttttgg agcatttatt tttggatcag ttactccagt ttttgcctt gtatatgctg
35 aaattttcaa tgtatactct ttgccagctg atcaaagca agcaaagtgt tatttctggt gtggaatgtt
  tgttcttatg ggaatcactt tcttcggttg attcttctc tctgcaaatt gcctcgagc atgtggagag
  tctactgaca tgaagttgag atttgaagca ttcaagaatt tattaagaca agatatcgct ttttatgatg
  atttgagaca tggaaactgga aaattgtgca caagatttgc aactgatgct ccgaatgttc gatatgtatt
  cacaagactt ccagttgttt tagcatcaat tgtgactatt tgtggagctc tgggaattgg attctattac
40 ggatggcaac ttgccttgat tcttgctgta atggttccac tacttgtaat gggaggatat ttcgaaatgc
  aaatgagatt tggaaaacaa ataagagata ctcaattgtt ggaagaagct ggaaaagtag cttcacaggc
  tgttgaaacac attcgaacag ttcatagttt aaatcgctag gaacaatttc atttcacata ctgtgaatai
  cttcgggaac cattcaatac taatctgaaa catgcacata catatggagc tgtatttgca ttctctcaat
  ctcttatttt cttcatgtat gctgctgcat tctatcttgg aagtattttt gtaaatcaac aagctatgca
45 accaattgat gtctatcgag tattctttgc tatttcattc tgtggacaaa tgattggaaa tactacatct
  tttattcctg atgtcgtaaa agctcgtctt gctgcttctc ttttgttcta tcttattgaa catccaacac
  ctattgattc tctatctgat agtggaaatt tgaagccgat aactggaaat atttcaatca gaaatgtatt
  tttcaattat ccaacaagaa aggataccaaa ggttttacaa ggattcactc ttgatataca agccggtaaa
  actgttgcac ttgtcgggca ctcaggatgt ggaaaatcta caattatggg actgctggag agattctata
50 atcaagataa aggaatgatt atgattgatg gtgataacat ccgtaaccta aacatcagtt cacttcgcga
  acaagtatgt attgtaagtc aagagccaac gttgtttgat tgcacaattg gagaaaatat ttgtacgga
  acaaatcgaa atgttacata tcaagaaatt gttgaagctg ccaaaatggc aaatattcac aatttcattc
  taggattgcc agatgggtat gatactcatg tcggagagaa aggaactcaa ctttcgggtg gtcaaaaaca
  aagaattgcc attgcacggg cacttggtcg atctccttct gttttacttt tggatgaagc aactagtgca
55 ttagatacgg aaagtgaaaa gattgtacaa gaagcattgg acgccgcaaa acaaggctgc acgtgtcttg
  tcattgctca tcggttgagc acaattcaaa atagtacgt cattgcgata gtcagtgagg gtaaaattgt
```

Title: POLYNUCLEOTIDE AND POLYPEPTIDE FAT
METABOLISM REGULATORS AND USES THEREOF

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ggaaaagggg acacatgacg agttgataag gaagagtga atatacaga aattctgtga aacgcagagg
attgtcgaaa gtcaataa

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Figure 12F

LPO-3

SEQ ID NO:6

	MKSRKNEPTW	VTKPLLKRSH	SSDSSIDEST	VKLTYNYGIFY	YTQGVDLLLL	ITGTVAAVIH	GAGFPLLAIV
5	LGGMTTVFLR	AQNSDFVGV	DNVNPEGLVP	ISLDEFNSEV	VKYCIYYLVL	GVLMMFFTSYV	QIACFESYAE
	RLVHKLRQNY	LKAILRQQIQ	WFDKQQTGNL	TARLTDDLRL	VREGLGDKFA	LLVQMFAAFL	AGYGVGFFYS
	WSMTLVMMGF	APLIVLSGAK	MSKSMATRTR	VEQETYAVAG	AIAEETFSSI	RTVHSLNGHK	RELDRFYNAL
	EVGRQTGIVK	YCYMGIGVGF	SNLCMYSSYA	LAFWYGSTLI	INDPTFDRGL	IFTVFFAVLS	GSTSLGGALP
	HLASFGTARG	AASTVLRVIN	SHPKIDPYSL	EGILVDNMKG	DISFKDVHFR	YPSRKDIHVL	KGISLELKAG
10	DKIALVGSSG	CGKSTIVNLL	QRFYDPTKGR	VLIDGVDLRE	VNVHSLREI	GIVSQEPVLF	DGTIYENIKM
	GNEHATHDQV	VEACKMANAN	DFIKRLPDGY	GTRVGEKGVQ	LSGGQKQRIA	IARALVKNPK	ILLLDEATSA
	LDTEAEREVQ	GALDQAQAGR	TTIIVAHRLS	TIRNVDRIFV	FKAGNIVESG	SHEELMSKQG	IFYDMTQAQV
	VRQQQEAGK	DIEDTISESA	HSHLSRKSST	RSASISATSI	HQLAEVEEC	KAPPTSMFKI	FKFNGDKVGW
	FIGGIFGAFI	FGSVTPVFAL	VYAEIFNVYS	LPADQMQLANV	YFWCGMFVLM	GITFFVGFFT	SANCLGRCGE
15	SLTMKLRFEA	FKNLLRQDIA	FYDDL RHGTG	KLCTRFATDA	PNVRYVFTRL	PVVLASIVTI	CGALGIGFYY
	GWQLALILVV	MVPLLVMGGY	FEMQMRFGKQ	IRDTQLLEEA	GKVASQAVEH	IRTVHSLNRQ	EQFHFTYCEY
	LREPNTNLK	HAHTYGAVFA	FSQSLIFFMY	AAAFYLGSI	VNQQAMQPID	VYRVFFAISF	CGQMIGNTTS
	FIPDVVKARL	AASLLFYLIE	HPTPIDSLSD	SGIVKPITGN	ISIRNVFFNY	PTRKDTKVLQ	GFTLDIKAGK
	TVALVGHSGC	GKSTIMGLLE	RFYNQDKGMI	MIDGDNIRNL	NISSLREQVC	IVSQEPTLFD	CTIGENICYG
20	TNRNVTYQEI	VEAAKMANIH	NFILGLPDGY	DTHVGEKGTQ	LSGGQKQRIA	IARALVRSPS	VLLLDEATSA
	LDTESEKIVQ	EALDAAKQGR	TCLVIAHRLS	TIQNSDVIAI	VSEGKIVEKG	THDELIRKSE	IYQKFCETQR
	IVESQ						

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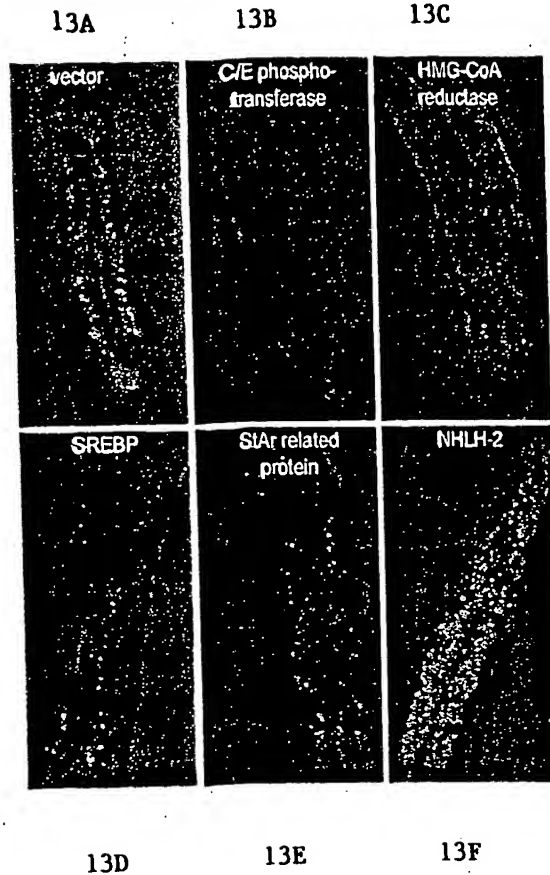
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Figure 12G

5	human MOUSE LPO-3	MDLEGDRNGGAKKKNFFKLNNKSEKDKKPKPTVSVFSMFRYSNWLDKLYMVVGTAAII 60 MEFEENLKGRADK-NFSKMGKKSKKEKKPAVGVFGMFRYADWLDKLCMILGTAAII 59 MKSRRNEPTWVTK-PLLRSHSSDSSIDESTVKLTNYGIFYTQGVDLLLTGTVAIVI 59 * . . . : * . : * * : : : * * : : * * : : * * : : *	SEQ ID NO:11 SEQ ID NO:12 SEQ ID NO:6
10	human MOUSE LPO-3	HGAGLPLMLLVFGEMTDIFANAGNLEDLSNITNRSDINDTGFFMN--LEEDMTRYAYYY 118 HGTLLPLMLLVFGNMNTDSFTKA--EASILPSITNQSGPNSTLIISNSSLEEEMAIYAYYY 117 HGAGFPLLAIVLGGMTTVFLRAQ-NSDFVVGVDN-VNPEGLVPISLDEFNSEVVKYCIYY 117 ** : ** : ** : * * * . * . . : : : * . : . : : : . * . **	
15	human MOUSE LPO-3	SGIGAGVLVAAYIQVSFWCLAAGRQIHKIRKQFFHAIMRQEIGWFDVHDVDELNRLTDD 178 TGIGAGVLIVAYIQVSLWCLAAGRQIHKIRKQFFHAIMRQEIGWFDVHDVDELNRLTDD 177 LVGLVLMFFTSYVQIACFESYAEERLVHKLRLQNYLKAILRQIQWFDKQQTGNLRLTDD 177 * . : : : : * : : : * * : * : : * : : : * : : * : : * : : * : : *	
20	human MOUSE LPO-3	VSKINEGIGDKIGMFFQSMATFTTGFIWGTGRWKLTLVILAI SPVLGLSAAVWAKILSS 238 VSKINDGIGDKIGMFFQSITTFLAGFIIGFISGWKLTLVILAVSPLIGLSSALWAKVLTS 237 LERVEGLGDKFALLVQMFAAFLAGYGVGFYSWSMTLVMMGFAPLIVLSGAKMSKSMAT 237 : : : : * : * : : : * : : : * : * : : * : * : : * : * : : * : *	
25	human MOUSE LPO-3	FTDKELLAYAKAGAVAEVLAARTVIAFGGQKKELERYNKNLEAKRIGIKKAITANIS 298 FTNKLQAYAKAGAVAEVLAARTVIAFGGQKKELERYNKNLEAKNKGVIKKAITASIS 297 RTRVEQETAYAVAGIAEETFSSIRTVHSLNGHKRELDREYNALVEGRQTGIVKYCYMGIG 297 * * : * * : * * : * * : * * : * * : * * : * * : * * : * *	
30	human MOUSE LPO-3	ICAAFLLIYASYALAFWYGTTLVLSG-EYSIGQVLTFFSVLIGAFSVGQASPSIEAFAN 357 IGIAYLLVYASYALAFWYGTSLVLSN-EYSIGEVLTFFSILLGTFSIGHLAPNIEAFAN 356 VGFSNLCMYSSYALAFWYGTSLIINDPTFDRGLIFTVFFAVLSGSTSLGGALPHLASFGT 357 * : * : * : * : * : * : * : * : * : * : * : * : * : * : *	
35	human MOUSE LPO-3	ARGAAYEIFKIIDNKPSIDSYSKSGHKPDNIKGNLEFRNVHFSYPSRKEVKILKGLNLKV 417 ARGAAYEIFKIIDNEPSIDSFSTKGYKPDSIMGNLEFKNVHFNYPSPRSEVQILKGLNLKV 416 ARGAASTVLRVINSHPKIDPYSLEGILVDNMKGDISFKDVHFRYPSRKDIHVLKGISLEL 417 ***** : : : : * : * : * : * : * : * : * : * : * : * : * : *	
40	human MOUSE LPO-3	QSGQTVALVGNSSGCGKSTTVQLMQRLYDPTGEMVSVDDQDRTINVRFLREIIGVVSQEP 477 KSGQTVALVGNSSGCGKSTTVQLMQRLYDPLEGVVSDGQDRTINVRFLREIIGVVSQEP 476 KAGDKIALVGNSSGCGKSTIVNLLQRFYDPTKGRVLIDGVDLREVNHSLREQIGIVSQEP 477 : : * : : * : * : * : * : * : * : * : * : * : * : * : *	
45	human MOUSE LPO-3	VLFTATTIAENIRYGRNVMTDEIEKAVKEANAYDFIMKLPKFDTLVGERGAQLSGGQKQ 537 VLFTATTIAENIRYGRNVMTDEIEKAVKEANAYDFIMKLPKFDTLVGERGAQLSGGQKQ 536 VLFDGTIYENIKMGNEHATHDQVVEACKMANANDFIKRLPDGYGTRVGEKGVQLSGGQKQ 537 *** * * * : * . . * : : : * * * * * : * . : * * * : * . * * * *	
50	human MOUSE LPO-3	RIAIARALVRNPKILLDEATSALDTESEAVVQVALDKARKGRTTIVIAHRLSTVRNADV 597 RIAIARALVRNPKILLDEATSALDTESEAVVQALDKAREGRTTIVIAHRLSTVRNADV 596 RIAIARALVRNPKILLDEATSALDTEAEREVQALDQAQAGRTTIVIAHRLSTIRNVDR 597 ***** : * * * * : * * * * : * * * * : * * * * : * * * *	
55	human MOUSE LPO-3	IAGFDDGVIVEKGNHDELMKEKGIYFKLVMTQTAGNEVELENAADESKSEIDALEMSSND 657 IAGFDGGVIVEQGNHDELMREKGIYFKLVMTQTRGNEIEPGNNAYGSQSDTDASELTSEE 656 IFVFKAGNIVESGSHEELMSKQGI FYDMTQAQVVRQQQ-----EAGKDIEDTISES 649 * * . * * * : * : * : * : * . : : : : : * : * :	
60	human MOUSE LPO-3	SRSSLIRKRSTRSVRGSQAQDRKLSTKEALDESIPPVSFWRIMKLNLTWPYFVVGVC 717 SKSPLIR-RSIYRSVHRKQDQERRLSMKEAVDEVDPLVSFWRILNLTSEWPYLLVGVLC 715 AHSHLSRKSSTRSAIS--IATSIHQLAEEVEECKAPPTSMFKIFKFNKGDKVGFIFGIFG 707 : : * * . * : : . : : * . : . * : * : * : : : : * :	
65	human MOUSE LPO-3	AIINGGLQPAFAIIFSKIIGVFTRIDDPETKRQNSNLSLFLALGII SFITFFLQGF 777 AVINGCICQPVFAIVFSRIYGVFSRDDHETKRQNCNLSLFLVLMGLISFVYFFQGF 775 AFIFGSVTPVFALVYAEIFNVYSLPAD--QMQANVYFWCGMFLMGITFFVGF 765 * . * : * : * : * : * : * : * : * : * : * : * : * : * :	
70	human MOUSE LPO-3	GKAGEILTTLRLYMFVRSMLRQDVSWFDDPKNTTGALTTRLANDAAQVKAIGSRLAVIT 837 GKAGEILTTLRLYMFVRSMLRQDVSWFDDPKNTTGALTTRLANDAAQVKAIGSRLAVIT 835 GRCGESLTMKLRFEAFKNLLRQDIAFYDDLRHGTGKLCRFTADAPNVR-YVFTRLPVVL 824 * . * * : : : * : : * : * : * : * : * : * : * : * : * :	

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[illegible]



FIGURES 13A-13F